CLAIMS

1. An image forming apparatus including an acquisition unit for acquiring an image signal, and an image forming unit for forming an image based on the image signal acquired by said acquisition unit on a sheet having one or a plurality of memories, comprising:

an encryption key creating unit for creating an encryption key when said acquisition unit acquires an image signal;

an encrypting unit for encrypting the image signal with the encryption key created by said encryption key creating unit; and

a writing unit for writing the encryption key into the memory,

wherein said image forming unit forms an image based on the image signal encrypted by said encrypting unit on the sheet.

2. The image forming apparatus of claim 1, further comprising:

an image reading unit for reading the image formed on the sheet;

a memory reading unit for reading the encryption key from the memory when said image reading unit reads the image; and

a decrypting unit for decrypting the image signal of the image read by said image reading unit, with the encryption key read by said memory reading unit,

wherein said image forming unit forms an image based on the image signal decrypted by said decrypting unit on a sheet.

3. The image forming apparatus of claim 1, further comprising an information acquiring/creating unit for acquiring or creating information about the image encrypted with the encryption key,

wherein said writing unit writes the encryption key and the information acquired or created by said information acquiring/creating unit into the same memory, or different memories.

4. The image forming apparatus of claim 2,

wherein said memory reading unit reads the encryption key and information about the image encrypted with the encryption key from the same memory, or different memories, when said image reading unit reads the image, and said image forming apparatus further comprises a display unit for displaying the information read by said memory reading unit.

5. The image forming apparatus of claim 4, wherein

the information read by said memory reading unit includes the number of times the image based on the decrypted image signal of the read image was formed, and said writing unit writes the number of times obtained by adding one to the number read by said

memory reading unit into the same memory or different memory so as to update the number of times.

6. The image forming apparatus of claim 5, wherein

said image forming unit forms a number indicating the number of times obtained by adding one on the sheet when forming the image based on the decrypted image signal on the sheet.

7. The image forming apparatus of claim 6, wherein

said image forming unit forms the number in a visually inconspicuous form within a region where the image is formed.

8. The image forming apparatus of claim 5, wherein

the information read by said memory reading unit includes the number of times the image based on the decrypted image signal of the read image was formed and a predetermined numerical value, and said image forming apparatus further comprises: a judging unit for judging whether the number read by said memory reading unit is larger or smaller than the predetermined numerical value; and a prohibiting unit for prohibiting said decrypting unit from decrypting the image signal with the encryption key when said judging unit judges that the number is larger.

9. The image forming apparatus of claim 4, wherein

the information read by said memory reading unit includes

a period, and said image forming apparatus further comprises: a timer; a judging unit for judging whether or not a time shown by said timer is within the period read by said memory reading unit; and a prohibiting unit for prohibiting said decrypting unit from decrypting the image signal with the encryption key when said judging unit judges that the time is within the read period.

10. The image forming apparatus of claim 4, wherein

the information read by said memory reading unit includes one or a plurality of identifiers of image forming apparatus,

said image forming apparatus further comprises: a storing unit for storing an identifier; and a judging unit for judging whether or not the identifiers read by said memory reading unit include the identifier stored in said storing unit, and

said decrypting unit decrypts the image signal with the encryption key only when said judging unit judges that the read identifies include the stored identifier.

11. The image forming apparatus of claim 4, wherein

the information read by said memory reading unit includes a code,

said image forming apparatus further comprises: an input unit for inputting a code; and a judging unit for judging whether or not the code inputted by said input unit and the code read by said memory reading unit are identical, and

said decrypting unit decrypts the image signal with the encryption key only when said judging unit judges that the codes are identical.

12. An image forming apparatus including an image reading unit for reading an image formed on a sheet having one or a plurality of memories storing an encryption key, and an image forming unit for forming an image on a sheet, based on an image signal of the image read by said image reading unit, comprising:

a memory reading unit for reading the encryption key from the memory when said image reading unit reads the image; and

a decrypting unit for decrypting the image signal of the image read by said image reading unit, with the encryption key read by said memory reading unit,

wherein said image forming unit forms an image based on the image signal decrypted by said decrypting unit on a sheet.

13. The image forming apparatus of claim 12, wherein

said memory reading unit reads the encryption key and information about the image encrypted with the encryption key from the same or different memories when said image reading unit reads the image, and said image forming apparatus further comprises a display unit for displaying the information read by said memory reading unit.

14. The image forming apparatus of claim 13, wherein

the information read by said memory reading unit includes the number of times the image based on the decrypted image signal of the read image was formed, and said writing unit writes the number of times obtained by adding one to the number read by said memory reading unit into the same memory or different memory so as to update the number of times.

15. The image forming apparatus of claim 14, wherein

said image forming unit forms a number indicating the number of times obtained by adding one on the sheet when forming the image based on the decrypted image signal on the sheet.

16. The image forming apparatus of claim 15, wherein

said image forming unit forms the number in a visually inconspicuous form within a region where the image is formed.

17. The image forming apparatus of claim 14, wherein

the information read by said memory reading unit includes the number of times the image based on the decrypted image signal of the read image was formed and a predetermined numerical value, and said image forming apparatus further comprises: a judging unit for judging whether the number read by said memory reading unit is larger or smaller than the predetermined numerical value; and a prohibiting unit for prohibiting said decrypting unit from decrypting

the image signal with the encryption key when said judging unit judges that the number is larger.

18. The image forming apparatus of claim 13, wherein

the information read by said memory reading unit includes a period, and said image forming apparatus further comprises: a timer; a judging unit for judging whether or not a time shown by said timer is within the period read by said memory reading unit; and a prohibiting unit for prohibiting said decrypting unit from decrypting the image signal with the encryption key when said judging unit judges that the time is within the read period.

19. The image forming apparatus of claim 13, wherein

the information read by said memory reading unit includes one or a plurality of identifiers of image forming apparatus,

said image forming apparatus further comprises: a storing unit for storing an identifier; and a judging unit for judging whether or not the identifiers read by said memory reading unit include the identifier stored in said storing unit, and

said decrypting unit decrypts the image signal with the encryption key only when said judging unit judges that the read identifies include the stored identifier.

20. The image forming apparatus of claim 13, wherein

the information read by said memory reading unit includes

a code,

said image forming apparatus further comprises: an input unit for inputting a code; and a judging unit for judging whether or not the code inputted by said input unit and the code read by said memory reading unit are identical, and

said decrypting unit decrypts the image signal with the encryption key only when said judging unit judges that the codes are identical.